PROTECTING YOURSELF

WHILE PROTECTING YOUR COLLECTIONS

ON TODAY'S AGENDA

- Dangers found in collections
- How to identify hazardous materials
- Risk management
- Personal protective equipment
- Questions

YOUR HEALTH AND SAFETY IS MORE IMPORTANT THAN ANY OBJECT.

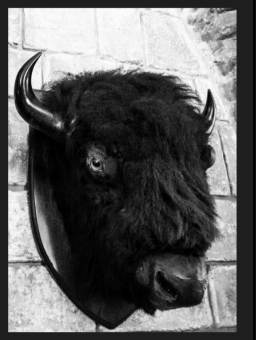
The Most Important Thing

WHAT ARE HAZARDOUS COLLECTION MATERIALS?

- Any material that has the potential to cause injury, illness or death; cause damage or loss; or inhibit operations
  (www.conservation-wiki.com/w/images/a/af/H&S_Presentation-Controlling_Hazardous_Collection_Materials_Presentation.pdf)

INHERENT HAZARDS

- These are hazardous at the time of manufacture, and remain so over time.
  - Arsenic in taxidermy mounts
  - Poison tips on arrowheads or weapons
  - Carbon tetrachloride in early fire extinguishing equipment
  - Mercury in thermometers or 18th century mirrors
  - Lead in bullets, stained glass or glazed ceramics
  - Pathogens or poisons in medical equipment and old medicines
  - Physical characteristics, such as sharp knives or blades
  - Etc-- The list goes on and on and on



ACQUIRED HAZARDS

- These become added to the object over time
  - Pesticides
  - Preservatives like formaldehyde and ethanol
  - Deterioration of object (cellulose nitrate film, for example)
  - Environmental contaminants like mold, frass, and bird droppings

HOW DOES THE BODY ABSORB TOXINS?

- Skin contact
- Inhalation
- Ingestion

THERE IS A DIFFERENCE BETWEEN A HAZARD AND A RISK.

Now that you're sufficiently terrified...

HOW DO WE IDENTIFY HAZARDS?

- Knowledge of the material
  - You know if you smell vinegar around film that you have acetic acid
  - You know that much taxidermy used arsenic as a preservative
  - You know that if you acquire a firearm you should assume it is loaded and dangerous
  - Sometimes arsenic manifests as a white powder on organic materials

HOW DO WE IDENTIFY HAZARDS?

- Historical records
  - Does your museum keep records on pesticides used?
  - Are there notes that come with a donated object that lead you to suspect treatment with a pesticide?
  - Does a brand name contain "Rad" or "Radi"?

Oak Ridge Associated Universities

HOW DO WE IDENTIFY HAZARDS?

- Understand your environment
  - Are there spaces that are prone to mold or pest invasion?
  - Do you have asbestos in your ceilings or walls?
  - How about lead paint?

HOW DO WE IDENTIFY HAZARDS?

- Chemical testing
  - Spot testing
  - Some require sophisticated equipment
- All testing should be performed by a trained conservator
  - Midwest Art Conservation Center offers inexpensive arsenic testing

SIGNS OF PESTICIDE USE

- Excellent condition compared to similar iems of the same age, materials and storage conditions
- Marked or labeled with a poison tag
- Fine white dust
- Crystals or colored efflorescence
- Better safe than sorry- suspect anything you can't easily identify

Caring for American Indian Objects – The Issue of Pesticide Contamination – Nancy Odegaard

- LOCAL ENVIRONMENTAL SAFETY AGENCY
- OSHA SMALL BUSINESS CONSULTATION SERVICE

HTTPS://WWW.OSHA.GOV/DCSP/SMALLBUSINESS/CONSULT.HTML

Need Help?

KEY RISK MANAGEMENT STRATEGIES

- Remove and replace affected object
- Isolate the object
- Use safe work practices

REMOVE AND REPLACE

- Dispose of the contaminated object
- Remediate the contaminant
- Process quickly to lessen risk of cross-contamination
- Dispose of hazardous waste in accordance with local regulations

ISOLATE

- Use well-sealed bags or containers
- In drawers under acrylic

SAFE WORK PRACTICES

- Good housekeeping and hygiene
- Documentation
- Personal protective equipment

HOUSEKEEPING

- Good housekeeping practices include:
  - Minimizing dust and particulate material
  - Cleaning storage containers if they will be reused
  - Covering work surfaces with removable and disposable materials
  - Segregating hazardous materials from non-hazardous
  - Moving objects in closed containers
  - Minimizing handling
  - Designing protocols to minimize risk to humans

HYGIENE

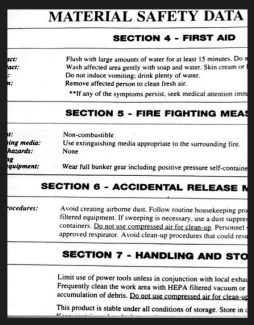
- No smoking
- No eating or drinking in workspaces
- Wash hands frequently
- Don't touch your face

DOCUMENTATION

- Use to alert staff and visitors about hazards
- Warning signs on objects, storage containers and entrances to storage areas
- Make notes in catalog records

GET THE MSDS

- MSDS – Manufacturer's Safety Data Sheet
- Contains vital safety information for chemicals, solvents and other toxic substances
- Keep on file for all potentially hazardous substances you purchase



MATERIAL SAFETY DATA

SECTION 4 - FIRST AID

Flush with large amounts of water for at least 15 minutes. Do n
Wash affected area gently with soap and water. Skin cream or
Do not induce vomiting; drink plenty of water.
Remove affected person to clean fresh air.
**If any of the symptoms persist, seek medical attention imm

SECTION 5 - FIRE FIGHTING MEAS

Non-combustible
Use extinguishing media appropriate to the surrounding fire.
None
Wear full bunker gear including positive pressure self-contain

SECTION 6 - ACCIDENTAL RELEASE M

Avoid creating airborne dust. Follow routine housekeeping pro
filtered equipment. If sweeping is necessary, use a dust suppre
containers. Do not use compressed air for clean-up. Personnel
approved respirator. Avoid clean-up procedures that could resu

SECTION 7 - HANDLING AND STO

Limit use of power tools unless in conjunction with local exha
Frequently clean the work area with HEPA filtered vacuum or
accumulation of debris. Do not use compressed air for clean-u
This product is stable under all conditions of storage. Store in

VACCINES

- All staff members working with collections should have a current tetanus vaccine.
- Update the vaccine every 10 years
- Hepatitis A and B vaccines are useful for working in emergency situations

PERSONAL PROTECTIVE EQUIPMENT

- Should be selected to match the hazard but may include:
  - Respirators
  - Gloves
  - Safety goggles
  - Ear protection
  - Protective clothing like Tyvek suits or lab coats

GLOVES

- Nitrile are usually preferred over latex
- When working with chemicals, check glove usage charts
- Color of nitrile not usually a consideration for museum work

WHITE COTTON GLOVES PROVIDE NO PROTECTION AT ALL.

While we're on the subject…

GLOVE USAGE

- Check for punctures, tears or other signs of deterioration after you put them on
- Remove and replace when damaged or splashed with chemicals
- Never reuse disposable gloves
- Take gloves off inside out and dispose of them correctly
- Do not wear contaminated gloves when touching things like desk telephones, elevator buttons, doorknobs, etc.

LAB COATS/TYVEK SUITS

- Can be very useful when dealing with particulates
- Lab coats can be washed
- Tyvek suits are disposable

RESPIRATORS

- Air-purifying respirator
  - a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
  - (*OSHA Standard 1910.134*)

WHEN IS A RESPIRATOR IMPORTANT?

- Whenever an inhaled hazard is present
  - Mold
  - Solvent vapors
  - Acids from deteriorating film
  - Asbestos
  - Lead
  - Arsenic
  - Etc.

DISPOSABLE RESIPIRATORS

- Appropriate with particulate contaminants like mold, dust, residues of pesticides
- Not appropriate for gasses or vapors
- Require fit testing to make sure you're using appropriately

TYPES OF NON-DISPOSABLE RESPIRATORS

- Half Mask
  - Elastomer
  - Disposable
- Full Face
- Must be NIOSH approved

CARTRIDGES

- P100 suitable for most museum applications
- Filters are also available for gas and vapors

WHO CAN WEAR A RESPIRATOR?

- You can wear a respirator if you have:
  - Passed a medical evaluation
  - Are clean-shaven
  - Have been trained in use and care
  - Have been fit tested

FIT TESTING

- Fit testing should be done annually
- Contact local OSHA office for advice on someone who can perform testing or purchase kit yourself
- 3M has inexpensive online medical evaluation http://solutions.3m.com/wps/portal/3M/en_US/3M-PPE-Safety-Solutions/Personal-Protective-Equipment/safety-management/safety-programs/OnlineRespiratorMedicalEvaluations/

THANK YOU!

- Let's stay in touch!
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